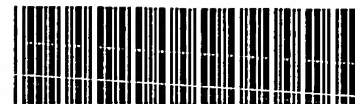


## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.

Application Serial Number: 10/520,220  
Source: PCT  
Date Processed by STIC: 1-13-05

# ***ENTERED***



PCT

## RAW SEQUENCE LISTING

DATE: 01/13/2005

PATENT APPLICATION: US/10/520,220

TIME: 17:13:29

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\01132005\J520220.raw

```

3 <110> APPLICANT: Yocum , R. Rogers
4     Patterson, Thomas A.
5     Pero, Janice G.
6     Hermann, Theron
8 <120> TITLE OF INVENTION: MICROORGANISMS AND PROCESSES FOR ENHANCED PRODUCTION OF
9     PANTOTHENATE
11 <130> FILE REFERENCE: BGI-154US2
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/520,220
C--> 13 <141> CURRENT FILING DATE: 2005-01-03
13 <150> PRIOR APPLICATION NUMBER: PCT/US2003/021305
14 <151> PRIOR FILING DATE: 2003-07-03
16 <150> PRIOR APPLICATION NUMBER: 60/393826
17 <151> PRIOR FILING DATE: 2002-07-02
19 <160> NUMBER OF SEQ ID NOS: 31
21 <170> SOFTWARE: PatentIn Ver. 2.0
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 194
25 <212> TYPE: DNA
26 <213> ORGANISM: Artificial Sequence
28 <220> FEATURE:
29 <223> OTHER INFORMATION: Description of Artificial Sequence:promoter
30     sequence
32 <220> FEATURE:
33 <221> NAME/KEY: -35_signal
34 <222> LOCATION: (136)..(141)
36 <220> FEATURE:
37 <221> NAME/KEY: -10_signal
38 <222> LOCATION: (159)..(164)
40 <400> SEQUENCE: 1
41 gctattgacg acagctatgg ttcactgtcc accaaccaaa actgtgtctca gtaccgccaa 60
42 tattttctccc ttgaggggta caaagagggtg tccctagaag agatccacgc tgtgtaaaaa 120
43 ttttacaaaa aggtattgac tttccctaca ggggtgtgtaa taatttaatt acaggcgggg 180
44 gcaaccccg cgtgt                                     194
47 <210> SEQ ID NO: 2
48 <211> LENGTH: 163
49 <212> TYPE: DNA
50 <213> ORGANISM: Artificial Sequence
52 <220> FEATURE:
53 <223> OTHER INFORMATION: Description of Artificial Sequence:promoter
54     sequence
56 <220> FEATURE:
57 <221> NAME/KEY: -35_signal
58 <222> LOCATION: (113)..(118)

```

## RAW SEQUENCE LISTING

DATE: 01/13/2005

PATENT APPLICATION: US/10/520,220

TIME: 17:13:29

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\01132005\J520220.raw

```

60 <220> FEATURE:
61 <221> NAME/KEY: -10_signal
62 <222> LOCATION: (136)..(141)
66 <400> SEQUENCE: 2
67 gcctacctag cttccaagaa agatataccta acagcacaag agcggaaaga tgttttggtc 60
68 tacatccaga acaacctctg ctaaaattcc tgaaaaattt tgcaaaaagt tgttgacttt 120
69 atctacaagg tgtggtataa taatcttaac aacagcagga cgc 163
72 <210> SEQ ID NO: 3
73 <211> LENGTH: 127
74 <212> TYPE: DNA
75 <213> ORGANISM: Artificial Sequence
77 <220> FEATURE:
78 <223> OTHER INFORMATION: Description of Artificial Sequence:promoter
79 sequence
81 <220> FEATURE:
82 <221> NAME/KEY: -35_signal
83 <222> LOCATION: (34)..(39)
85 <220> FEATURE:
86 <221> NAME/KEY: -10_signal
87 <222> LOCATION: (58)..(63)
89 <220> FEATURE:
90 <221> NAME/KEY: -35_signal
91 <222> LOCATION: (75)..(80)
93 <220> FEATURE:
94 <221> NAME/KEY: -10_signal
95 <222> LOCATION: (98)..(103)
97 <400> SEQUENCE: 3
98 gaggaatcat agaattttgt caaaataatt ttattgacaa cgtcttatta acgttgatat 60
99 aattttaatt ttatttgaca aaaatgggct cgtgttgtag aataaatgta gtgaggtgga 120
100 tgcaatg 127
103 <210> SEQ ID NO: 4
104 <211> LENGTH: 24
105 <212> TYPE: DNA
106 <213> ORGANISM: Artificial Sequence
108 <220> FEATURE:
109 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
110 binding site
112 <400> SEQUENCE: 4
113 taaacatgag gaggagaaaa catg 24
115 <210> SEQ ID NO: 5
116 <211> LENGTH: 28
117 <212> TYPE: DNA
118 <213> ORGANISM: Artificial Sequence
120 <220> FEATURE:
121 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
122 binding site
124 <400> SEQUENCE: 5
125 attcgagaaa tggagagaat ataatatg 28
127 <210> SEQ ID NO: 6

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## RAW SEQUENCE LISTING

DATE: 01/13/2005

PATENT APPLICATION: US/10/520,220

TIME: 17:13:29

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\01132005\J520220.raw

```

128 <211> LENGTH: 13
129 <212> TYPE: DNA
130 <213> ORGANISM: Artificial Sequence
132 <220> FEATURE:
133 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
134     binding site
136 <400> SEQUENCE: 6
137 agaaaggagg tga                                     13
139 <210> SEQ ID NO: 7
140 <211> LENGTH: 23
141 <212> TYPE: DNA
142 <213> ORGANISM: Artificial Sequence
144 <220> FEATURE:
145 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
146     binding site
148 <220> FEATURE:
149 <221> NAME/KEY: misc_feature
150 <222> LOCATION: 17, 18, 19, 20
151 <223> OTHER INFORMATION: n = a, t, c, or g
153 <400> SEQUENCE: 7
W--> 154 ttaagaaagg aggtgannnn atg                               23
156 <210> SEQ ID NO: 8
157 <211> LENGTH: 23
158 <212> TYPE: DNA
159 <213> ORGANISM: Artificial Sequence
161 <220> FEATURE:
162 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
163     binding site
165 <220> FEATURE:
166 <221> NAME/KEY: misc_feature
167 <222> LOCATION: 16, 17, 18, 19, 20
168 <223> OTHER INFORMATION: n = a, c, t, or g
170 <400> SEQUENCE: 8
W--> 171 ttagaaagga ggtgannnnn atg                               23
173 <210> SEQ ID NO: 9
174 <211> LENGTH: 23
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
178 <220> FEATURE:
179 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
180     binding site
182 <220> FEATURE:
183 <221> NAME/KEY: misc_feature
184 <222> LOCATION: 14, 15, 16, 17, 18, 19, 20
185 <223> OTHER INFORMATION: n = a, c, t, or g
187 <400> SEQUENCE: 9
W--> 188 agaaaggagg tgannnnnnn atg                               23
190 <210> SEQ ID NO: 10
191 <211> LENGTH: 22

```

## RAW SEQUENCE LISTING

DATE: 01/13/2005

PATENT APPLICATION: US/10/520,220

TIME: 17:13:29

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\01132005\J520220.raw

```

192 <212> TYPE: DNA
193 <213> ORGANISM: Artificial Sequence
195 <220> FEATURE:
196 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
197     binding site
199 <220> FEATURE:
200 <221> NAME/KEY: misc_feature
201 <222> LOCATION: 14, 15, 16, 17, 18, 19
202 <223> OTHER INFORMATION: n = a, c, t, or g
204 <400> SEQUENCE: 10
W--> 205 agaaaggagg tgannnnnna tg                                22
207 <210> SEQ ID NO: 11
208 <211> LENGTH: 25
209 <212> TYPE: DNA
210 <213> ORGANISM: Artificial Sequence
212 <220> FEATURE:
213 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
214     binding site
216 <400> SEQUENCE: 11
217 ccctctagaa ggaggagaaa acatg                                25
219 <210> SEQ ID NO: 12
220 <211> LENGTH: 24
221 <212> TYPE: DNA
222 <213> ORGANISM: Artificial Sequence
224 <220> FEATURE:
225 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
226     binding site
228 <400> SEQUENCE: 12
229 ccctctagag gaggagaaaa catg                                24
231 <210> SEQ ID NO: 13
232 <211> LENGTH: 23
233 <212> TYPE: DNA
234 <213> ORGANISM: Artificial Sequence
236 <220> FEATURE:
237 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
238     binding site
240 <400> SEQUENCE: 13
241 ttagaaagga ggatttaa atg                                23
243 <210> SEQ ID NO: 14
244 <211> LENGTH: 23
245 <212> TYPE: DNA
246 <213> ORGANISM: Artificial Sequence
248 <220> FEATURE:
249 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
250     binding site
252 <400> SEQUENCE: 14
253 ttagaaagga ggtttaatta atg                                23
255 <210> SEQ ID NO: 15
256 <211> LENGTH: 23

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## RAW SEQUENCE LISTING

DATE: 01/13/2005

PATENT APPLICATION: US/10/520,220

TIME: 17:13:29

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\01132005\J520220.raw

```

257 <212> TYPE: DNA
258 <213> ORGANISM: Artificial Sequence
260 <220> FEATURE:
261 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
262     binding site
264 <400> SEQUENCE: 15
265 ttagaaaagga ggtgatttaa atg                                     23
267 <210> SEQ ID NO: 16
268 <211> LENGTH: 23
269 <212> TYPE: DNA
270 <213> ORGANISM: Artificial Sequence
272 <220> FEATURE:
273 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
274     binding site
276 <400> SEQUENCE: 16
277 ttagaaaagga ggtgttttaa atg                                     23
279 <210> SEQ ID NO: 17
280 <211> LENGTH: 28
281 <212> TYPE: DNA
282 <213> ORGANISM: Artificial Sequence
284 <220> FEATURE:
285 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
286     binding site
288 <400> SEQUENCE: 17
289 attcgagaaa ggaggtgaat ataatatg                                 28
291 <210> SEQ ID NO: 18
292 <211> LENGTH: 27
293 <212> TYPE: DNA
294 <213> ORGANISM: Artificial Sequence
296 <220> FEATURE:
297 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
298     binding site
300 <400> SEQUENCE: 18
301 attcgagaaa ggaggtgaat aataatg                                   27
303 <210> SEQ ID NO: 19
304 <211> LENGTH: 28
305 <212> TYPE: DNA
306 <213> ORGANISM: Artificial Sequence
308 <220> FEATURE:
309 <223> OTHER INFORMATION: Description of Artificial Sequence:ribosome
310     binding site
312 <400> SEQUENCE: 19
313 attcgtagaa aggaggtgaa ttaatatg                                 28
315 <210> SEQ ID NO: 20
316 <211> LENGTH: 51
317 <212> TYPE: DNA
318 <213> ORGANISM: Artificial Sequence
320 <220> FEATURE:
321 <223> OTHER INFORMATION: Description of Artificial Sequence:5' PCR primer

```

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/520,220

DATE: 01/13/2005  
TIME: 17:13:30

Input Set : A:\seqlist.txt  
Output Set: N:\CRF4\01132005\J520220.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; N Pos. 17,18,19,20 ✓  
Seq#:8; N Pos. 16,17,18,19,20 ✓  
Seq#:9; N Pos. 14,15,16,17,18,19,20 ✓  
Seq#:10; N Pos. 14,15,16,17,18,19 ✓

## VERIFICATION SUMMARY

DATE: 01/13/2005

PATENT APPLICATION: US/10/520,220

TIME: 17:13:30

Input Set : A:\seqlist.txt

Output Set: N:\CRF4\01132005\J520220.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No  
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:154 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0  
L:171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0  
L:188 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0  
L:205 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0  
L:324 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:20  
L:336 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:21  
L:348 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:22  
L:360 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:23  
L:372 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:24  
L:518 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:25